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mentary species" will replace the "collective species" of Linnaeus are questions that must be left for the future to answer.—H. C. COWLES.

### MINOR NOTICES.

EDGAR W. OLIVE has<sup>9</sup> published a preliminary enumeration of the Sorophoreae, in advance of a more extended paper on the Acrasieae and their allies. Twenty-five species are presented, only one member of the group having been heretofore reported from America. A new genus (*Guttulinopsis*) is characterized, containing three species, and five other new species are described.—J. M. C.

THE FOURTH FASCICLE<sup>10</sup> of the list of the genera of seed plants according to the Engler sequence has just appeared. The general character of the work was stated in this journal<sup>11</sup> in the notice of the first fascicle. In the present signature 1340 genera are listed, bringing the total number up to 5182. This fascicle begins with Dipteryx (Leguminosae) and ends with Cochlanthera (Guttiferae).—J. M. C.

THE SEVENTH PART of Engler's *Pflanzenreich* has appeared,<sup>12</sup> and contains the Naiadaceae (family 12 of the spermatophyte series), by A. B. Rendle. The preliminary discussion is in English, and deals with the vegetative organs, anatomy, floral structure, geographic distribution, etc. The single genus *Naias* is presented as including thirty-two species, *N. marina* comprising sixteen named varieties.—J. M. C.

PARTS 211 and 212 of Engler and Prantl's *Natürlichen Pflanzenfamilien* have appeared.<sup>13</sup> The former contains the Lepidodendraceae, Bothrodendraceae, Sigillariaceae, and Pleuromoiaceae, by H. Potonié, and the beginning of Isoetaceae by R. Sadebeck. It is interesting to note that in Potonié's scheme of phylogeny the Lepidodendraceae give rise to the Araucarieae, and these in turn to the other conifers. Part 212 contains the Dicranaceae, Leucobryaceae, Fissidentaceae, Calymperaceae, and Pottiaceae by V. F. Brotherus.—J. M. C.

OHIO FUNGI EXSICCATI, briefly noticed last month, are being issued in small fascicles by Professor W. A. Kellerman, of the Ohio State University. They are not sold, but distributed to mycological students and collectors making exchanges. The first fascicle, issued November 20, 1901, contains sixteen numbers, the specimens being ample and well packeted. Eight of these numbers belong to the Uredineæ, and the remainder to various para-

<sup>9</sup>Proc. Amer. Acad. 37 : 333-344. 1901.

<sup>10</sup>DALLA TORRE, C. G. DE, and HARMS, A.: Genera Siphonogamarum ad systema Englerianum conscripta. Fasciculus quartus (signatura 31-40). Small 4to, pp. 241-320. Leipzig: Wilhelm Engelmann, 1901. M 4.

<sup>11</sup>BOT. GAZ. 30 : 67. 1900.

<sup>12</sup>Press of Wilhelm Engelmann, Leipzig.

sitic micro-fungi. Beside the usual data on the labels some synonymy is given, and also the original description of the species *verbatim et literatim*. An entirely new feature of the distribution, and one to be commended highly, is the exact reproduction of the labels in the form of a journal article, to be distributed as separates. The first issue is in the *Ohio Naturalist* (2: 135-140) of last November. Beside the labels, there is a page of introductory matter.—J. C. ARTHUR.

THE *Bulletin de l'Herbier Boissier* has undertaken to publish a card index<sup>13</sup> of the new species appearing since January 1, 1901. The cards are intended to be intercalated with those published in this country by Miss Josephine E. Clark. Unfortunately they are printed in sheets upon thin paper and are perforated for separation. The light weight of the stock, the uneven size of the cards, and the ragged perforated edges will certainly prove exasperating to those who undertake to insert these among any standard series of cards. The data furnished will be extremely valuable, but we fear the form of the publication will nullify the laudable intentions of the editor.—C. R. B.

### NOTES FOR STUDENTS

GIOVANNOZZI has studied<sup>14</sup> the mechanism and functions of hygroscopic movements in plants. Among the topics treated are movements of floral bracts and anthers, leaf movements, opening and closing of fruits, torsion of awns, movements of the branches of conifers, dispersal of spores. Most commonly there is an unequal swelling of neighboring tissues, sclerenchymatous cells in particular possessing great capacity for taking up water.—H. C. COWLES.

DR. A. ZIMMERMANN has discovered in the "scattered, large, thickened, hard warts" described by Trimen in *Pavetta indica*, as well as in some other allied species of Rubiaceae, the presence of masses of bacteria which penetrate into intercellular spaces of the leaves while they are still very young and there develop into huge masses. The presence of these bacteria produces the wart. What are the relations between the two organisms remains for later experimental investigation.<sup>15</sup>—C. R. B.

MITOTIC PHENOMENA in the flagellate, *Polytoma*, are described by

<sup>13</sup>Index botanique universel des genres, espèces et variétés de plantes, parus depuis le 1<sup>er</sup> janvier 1901. Publié par le Bulletin de l'Herbier Boissier, Chambésy, suisse. 25 fr. par an. Suite à Index Kewensis. Ces fiches sont destinées à être intercalées avec les "Card-Index Clark" américaines.

<sup>14</sup>Nuov. Giorn. Bot. Ital. 8: 207-237. 1901.

<sup>15</sup>ZIMMERMANN, A.: Ueber Bakterienknotten in den Blättern einiger Rubiaceen. Jahrb. Wiss. Bot. 37: 1-12. fgs. 1-9. 1901.